

# California Science Content Standards

The following are descriptions of the California Science Content Standards that are met through the Astro-Venture lessons. They are delineated as follows:

## CSCS 1 (K) 1a

<b>CSCS</b>	<b>California Science Content Standard</b>
<b>1</b>	<b>Standard Area</b>
<b>(K)</b>	<b>Grade</b>
<b>1a</b>	<b>Standard</b>

### First Grade

**CSCS 1(1) 1a** Students know solids, liquids, & gases have different properties.

### Third Grade

**CSCS 1(3) 1e** Students know matter has three forms: solid, liquid, and gas.

**CSCS 1(3) 1f** Students know evaporation and melting are changes that occur when the objects are heated.

**CSCS 3(3) 4c** Students know telescopes magnify the appearance of some distant objects in sky, including the Moon and the planets. The number of stars that can be seen through telescopes is dramatically greater than the number that can be seen by the unaided eye.

### Fourth Grade

**CSCS 2(4) 2** Students know all organisms need energy and matter to live and grow.

**CSCS 2(4) 3** Students know living organisms depend on one another and on their environment for survival.

### Fifth Grade

**CSCS 1(5) 1g** Students know properties of solid, liquid, and gaseous substances.

**CSCS 3(5) 5c** Students know the path of a planet around the Sun is due to gravitational attraction between the Sun and the planet.

**CSCS 4(5) 6b** Students will develop a testable question.

**CSCS 4(5) 6c** Students will plan and conduct a simple investigation based on a student-developed question and write instructions others can follow to carry out the procedure.

- CSCS 4(5) 6d** Students will identify the independent and controlled variables in an investigation.
- CSCS 4(5) 6e** Students will identify a single independent variable in a scientific investigation and explain how this variable can be used to collect information to answer a question about the results of the experiment.
- CSCS 4(5) 6f** Students will select appropriate tools and make quantitative observations.
- CSCS 4(5) 6g** Students will record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams) and make inferences based on those data.
- CSCS 4(5) 6h** Students will draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.

### Sixth Grade

- CSCS 2(6) 7a** Students will develop hypothesis.
- CSCS 2(6) 7b** Students will select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.

### Seventh Grade

- CSCS 2(7) 7a** Students will select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.

### Eight Grade

- CSCS 1(8) 3d** Students know the states of matter (solid, liquid, gas) depend on molecular motion.
- CSCS 1(8) 3e** Students know that in solids the atoms are closely locked in position and can only vibrate; in liquids the atoms and molecules are more loosely connected and can collide with and move past one another; and in gases the atoms and molecules are free to move independently, colliding frequently.
- CSCS 1(8) 4b** Students know that the Sun is one of many stars in the Milky Way galaxy and that stars may differ in size, temperature, and color.
- CSCS 2(8) 9a** Students will plan and conduct a scientific investigation to test a hypothesis.

### Nine - Twelve

- CSCS 4(9-12) 2d** Students know that stars differ in their life cycles and that visual, radio, and x-ray telescopes may be used to collect data that reveal the differences.
- Astro-Venture meets and addresses the following California & National standards.

Lesson Number/Title	California Science Standards	California Math Standards	National Standards
<b>1: Unit Introduction</b>	Meets: <ul style="list-style-type: none"> <li>CSCS 2(4) 2,3</li> </ul> Partially Meets: Addresses:	Meets: Partially Meets: Addresses:	Meets: <ul style="list-style-type: none"> <li>2061: 6C (3-5) #1&amp;2</li> <li>NSES: F (5-8) #1</li> </ul> Partially Meets: Addresses: <ul style="list-style-type: none"> <li>2061: 4B(6-8) #2</li> <li>NSES: A (5-8) #1</li> <li>ISTE: 3,5</li> </ul>
<b>2: Astronomy Training Module</b>	Meets: Partially Meets: Addresses: <ul style="list-style-type: none"> <li>CSCS 3(3) 4d</li> <li>CSCS 3(5) 5a,b</li> </ul>	Meets: Partially Meets: Addresses:	Meets: <ul style="list-style-type: none"> <li>NSES: A (5-8) #1</li> <li>ISTE: 3,5</li> </ul> Partially Meets: Addresses: <ul style="list-style-type: none"> <li>2061: 4B(6-8) #2</li> <li>2061: 4A(6-8) #1</li> <li>NSES: D (5-8) #3</li> </ul>
<b>3: Properties of Matter</b>	Meets: <ul style="list-style-type: none"> <li>CSCS 1(1) 1a</li> <li>CSCS 1(3) 1e</li> <li>CSCS 1(5) 1g</li> </ul> Partially Meets: <ul style="list-style-type: none"> <li>CSCS 1(K) 1b</li> </ul> Addresses:	Meets: Partially Meets: Addresses:	Meets: <ul style="list-style-type: none"> <li>NSES: B (K-4) #1</li> </ul> Partially Meets: Addresses: <ul style="list-style-type: none"> <li>NSES: A (5-8) #1</li> </ul>
<b>4: Matter and Molecules</b>	Meets: <ul style="list-style-type: none"> <li>CSCS 1(8) 3d,e</li> </ul> Partially Meets: Addresses: <ul style="list-style-type: none"> <li>CSCS 1(1) 1a</li> <li>CSCS 1(3) 1e</li> <li>CSCS 1(5) 1b,g</li> <li>CSCS 2(9-12) 2d</li> </ul>	Meets: Partially Meets: Addresses:	Meets: <ul style="list-style-type: none"> <li>2061: 4D(6-8) #3</li> <li>NSES: B (9-12) #5</li> </ul> Partially Meets: Addresses: <ul style="list-style-type: none"> <li>NSES: D (5-8) #1</li> </ul>
<b>5: Changing States of Matter</b>	Meets: <ul style="list-style-type: none"> <li>CSCS 1(3) 1f</li> <li>CSCS 4(5) 6b-h</li> <li>CSCS 1(8) 3d,e</li> <li>CSCS 2(8) 9a</li> </ul> Partially Meets: <ul style="list-style-type: none"> <li>CSCS 1(1) 1b</li> <li>CSCS 3(5) 3b</li> </ul> Addresses: <ul style="list-style-type: none"> <li>CSCS 2(9-12) 2d</li> </ul>	Meets: Partially Meets: Addresses: <ul style="list-style-type: none"> <li>CMCS D (4) 1.0</li> <li>CMCS D (5) 1.2</li> </ul>	Meets: <ul style="list-style-type: none"> <li>2061: 4D(6-8) #3</li> <li>NSES: B (9-12) #5</li> <li>NSES: A (5-8) #1</li> </ul> Partially Meets: Addresses: <ul style="list-style-type: none"> <li>NCTM: 4,5,9</li> </ul>

<b>6: Measuring Temperature</b>	Meets:  Partially Meets  Addresses: <ul style="list-style-type: none"> <li>CSCS 1(1) 1b</li> <li>CSCS 1(3) 1f</li> <li>CSCS 3(5) 3b</li> <li>CSCS 4(5) 6f</li> <li>CSCS 1(8) 3d,e</li> </ul>	Meets:  Partially Meets  Addresses:	Meets: <ul style="list-style-type: none"> <li>2061: 4D(6-8) #3</li> <li>NSES: B (9-12) #5</li> </ul> Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>NSES: A (5-8) #1</li> <li>NCTM: 4</li> </ul>
<b>7: Thinking in Systems</b>	Meets:  Partially Meets  Addresses: <ul style="list-style-type: none"> <li>CSCS 1(7) 5b</li> </ul>	Meets:  Partially Meets  Addresses:	Meets: <ul style="list-style-type: none"> <li>2061: 11A(3-5) #1&amp;2</li> <li>2061: 11A(6-8) #2&amp;3</li> <li>NSES: UCP (K-12) #1</li> </ul> Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>NSES: A (5-8) #1</li> </ul>
<b>8: The Solar System</b>	Meets: <ul style="list-style-type: none"> <li>CSCS 3(5) 5c</li> </ul> Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>CSCS 3(3) 4d</li> <li>CSCS 3(5) 5b</li> <li>CSCS 1(8) 4c</li> </ul>	Meets:  Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>CMCS A (4) 3.0</li> <li>CMCS A (5) 2.1</li> </ul>	Meets: <ul style="list-style-type: none"> <li>2061: 11A(3-5) #1&amp;2</li> <li>2061: 11A(6-8) #2&amp;3</li> <li>2061: 4G(6-8) #2</li> <li>NSES: UCP (K-12) #1</li> <li>NSES: D (5-8) #3</li> </ul> Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>NSES: A (5-8) #1</li> <li>NCTM: 2,5,9</li> <li>ISTE: 3,5</li> </ul>
<b>9: Planetary Temperature as a System</b>	Meets: <ul style="list-style-type: none"> <li>CSCS 1(8) 4b</li> </ul> Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>CSCS 3(5) 5a</li> <li>CSCS 1(8) 4c,d</li> </ul>	Meets:  Partially Meets:  Addresses:	Meets: <ul style="list-style-type: none"> <li>2061: 11A(6-8) #2</li> <li>NSES: UCP (K-12) #1</li> </ul> Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>NSES: A (5-8) #1</li> <li>NCTM: 2,5,9</li> </ul>
<b>10: Atmosphere and Temperature</b>	Meets: <ul style="list-style-type: none"> <li>CSCS 4(5) 6b-h</li> <li>CSCS 2(6) 7a,b</li> <li>CSCS 2(7) 7a</li> <li>CSCS 2(8) 9a</li> </ul> Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>CSCS 1(8) 4e</li> </ul>	Meets:  Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>CMCS D (5) 1.2</li> </ul>	Meets: <ul style="list-style-type: none"> <li>2061: 11A(6-8) #2</li> <li>NSES: UCP (K-12) #1</li> <li>NSES: A (5-8) #1</li> </ul> Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>NSES: A (5-8) #1</li> <li>NCTM: 4,5,9</li> </ul>

<b>11: Atmospheric Mass</b>	Meets:  Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>• CSCS 4(4) 6f</li> <li>• CSCS 3(5) 4e</li> <li>• CSCS 4(5) 6h,i</li> <li>• CSCS 2(6) 7a,b,d,e</li> <li>• CSCS 2(7) 7a,b,c,e</li> <li>• CSCS 1(8) 2g, 4e</li> <li>• CSCS 2(8) 9a,b</li> <li>• CSCS 1(9-12) 1e</li> <li>• CSCS 4(9-12) 4d</li> </ul>	Meets:  Partially Meets:  Addresses:	Meets: <ul style="list-style-type: none"> <li>• 2061: 11A(6-8) #2</li> <li>• NSES: UCP (K-12) #1</li> </ul> Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>• NSES: A (5-8) #1</li> <li>• NCTM: 2,5,9</li> </ul>
<b>12: Disrupting the System</b>	Meets:  Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>• CSCS 3(3) 4d</li> <li>• CSCS 3(5) 5c</li> <li>• CSCS 1(8) 2g, 4c</li> <li>• CSCS 1(9-12) 1e</li> </ul>	Meets:  Partially Meets:  Addresses:	Meets: <ul style="list-style-type: none"> <li>• 2061: 11A(6-8) #2</li> <li>• NSES: UCP (K-12) #1</li> </ul> Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>• NSES: A (5-8) #1</li> <li>• ISTE: 3,5</li> </ul>
<b>13: Astro-Venture Mission Module Training</b>	Meets: <ul style="list-style-type: none"> <li>• CSCS 3(3) 4c</li> <li>• CSCS 4(9-12) 2d</li> </ul> Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>• CSCS 4(4) 6f</li> <li>• CSCS 4(5) 6h,i</li> <li>• CSCS 2(6) 7a,b,d,e</li> <li>• CSCS 2(7) 7a,b,c,e</li> <li>• CSCS 2(8) 9a,b</li> </ul>	Meets:  Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>• CMCS D (4) 2.0</li> </ul>	Meets:  Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>• 2061: 1B (6-8) #1</li> <li>• NSES: A (5-8) #1</li> <li>• NCTM: 5,9</li> <li>• ISTE: 3,5</li> </ul>
<b>14: Final Project</b>	Meets:  Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>• CSCS 4(5) 6h,i</li> <li>• CSCS 2(6) 7d,e</li> <li>• CSCS 2(7) 7b,e</li> </ul>	Meets:  Partially Meets:  Addresses:	Meets:  Partially Meets:  Addresses: <ul style="list-style-type: none"> <li>• NSES: A (5-8) #1</li> </ul>